



# East Sister Island

Preliminary Park Management Plan



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Dear Sir/Madam:

Ontario Parks is presently engaged in the preparation of a park management plan for the East Sister Island Provincial Nature Reserve. As part of the planning process I am pleased to present the **East Sister Island Preliminary Park Management Plan**.

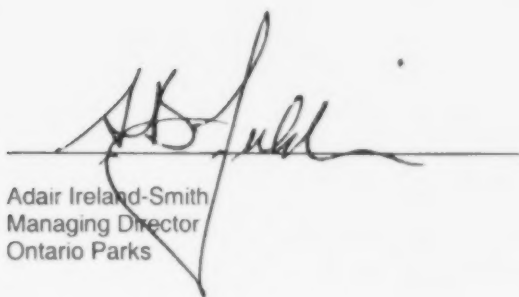
The preliminary park management plan contains all the proposed policies and direction statements for the long term management of the East Sister Island. This document is offered as Ontario Park's preferred policy direction for the nature reserve.

You are invited to review and comment on the preliminary park management plan. Ontario Parks is collecting this information under the authority of the *Provincial Parks Act* to assist in making decisions and determining further public consultation needs. Comments and opinions which do not constitute personal information as defined by the *Freedom of Information and Protection of Privacy Act*, will be shared within the Ministry of Natural Resources (MNR) and may be included in study documentation that is made available for public review. Personal information will remain confidential unless prior consent to disclose is obtained. However, this information may be used by the MNR to seek public input on other resource management surveys and projects. To submit comments, or to obtain further information regarding this Act, please contact:

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Your participation in this public consultation process is encouraged. All comments will be carefully considered during the preparation of the final park management plan.

Yours truly,



Adair Ireland-Smith  
Managing Director  
Ontario Parks



Date

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## Statement of Environmental Values and the Environmental Bill of Rights

The Ministry of Natural Resources' Statement of Environmental Values (SEV) was prepared in accordance with the provisions of the *Environmental Bill of Rights* (EBR). It describes how the purposes of the EBR are to be considered whenever decisions are made which might significantly affect the environment.

The primary purpose of the EBR is "to protect, conserve and, where reasonable, restore the integrity of the environment". From the MNR's perspective, that broad statement of purpose translates into four objectives in its SEV:

- to ensure the long-term health of ecosystems by protecting and conserving our valuable soil, aquatic resources, forest and wildlife resources as well as their biological foundations;
- to ensure the continuing availability of natural resources for the long-term benefit of the people of Ontario;
- to protect natural heritage and biological features of provincial significance; and,
- to protect human life, the resource base and physical property from the threats of forest fires, floods and erosion.

The Ministry's SEV has been considered in the development of this *preliminary park management plan*. The *preliminary management plan* for East Sister Island Provincial Nature Reserve will further the objectives of managing Ontario's resources on an ecologically sustainable basis.

## 1.0 INTRODUCTION

The Lake Erie Archipelago consists of a series of islands located in the western basin of the lake, mid-way between the Ontario and Ohio shorelines of Lake Erie. The Canadian portion of the Lake Erie Archipelago is comprised of nine islands, namely, East Sister Island, Pelee Island, North Harbour Island, Middle Sister Island, Middle Island, Hen Island, Little Chicken Island, Big Chicken Island, and Chick Island. East Sister Island is situated about 25 kilometres south of Leamington and 13.5 kilometres due west of Pelee Island (see Figures 1 and 2). The island is nearly flat and only a few metres above lake level at its highest point.

East Sister Island was acquired by the Province of Ontario in November 1971 from a then resident of Freemont, Ohio. East Sister Island Provincial Nature Reserve was regulated under the *Provincial Parks Act* in 1976 (Ontario Regulation 741/76), with a total of 53 hectares consisting of the 15 hectare island and 38 hectares of surrounding water.

This nature reserve makes a significant contribution to the system of provincial parks. Other provincial parks within the area include Lighthouse Point and Fish Point, both situated on Pelee Island, and Wheatley Provincial Park near the community of Wheatley (see Figure 1). Pelee Island is also home to other protected areas including Ontario Nature's Stone Road Alvar Nature Reserve, the Stone Road Alvar Conservation Area administered by the Essex Region Conservation Authority, and Shaughnessy Cohen Memorial Savanna managed by the Essex Field Naturalists' Club. Middle Island is managed by Parks Canada as part of Point Pelee National Park, itself located near Leamington.

Accessible only by boats with shallow draft, East Sister Island has had minimal human disturbance and is most characteristic of the pre-settlement flora and fauna of the Erie Islands. Also, the combination of the island's southern location and the moderating effects of the surrounding lake result in one of the longest growing seasons in eastern Canada with a number of plant and animal species occurring here that are rare or unknown anywhere else in the country.

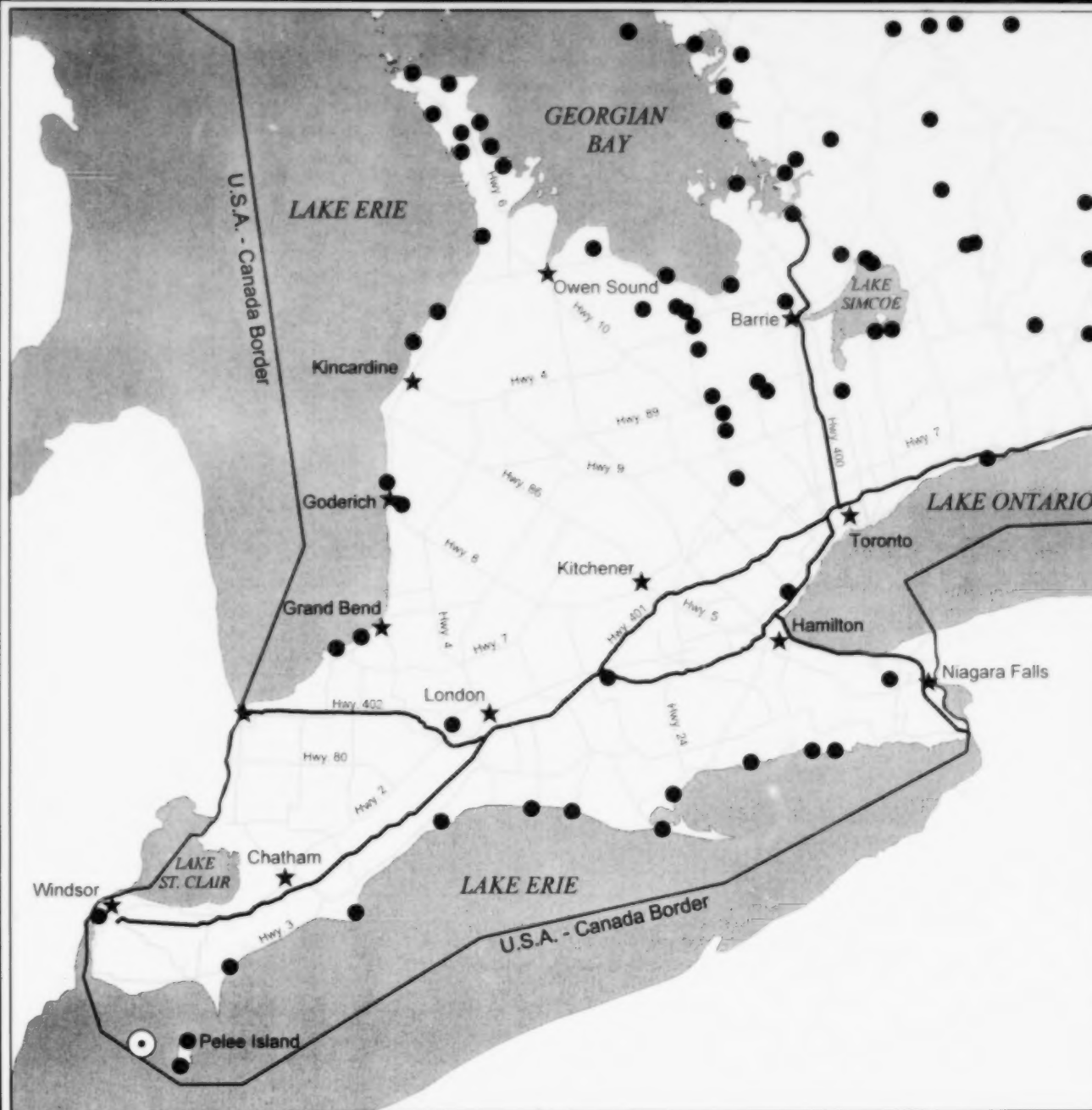
This document recognizes that Aboriginal communities may have used the area for hunting, trapping, fishing, gathering and travel. These uses may continue subject to public safety, conservation and other considerations.

## 2.0 SUMMARY OF MANAGEMENT CONCERNS

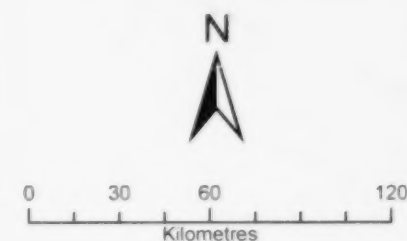
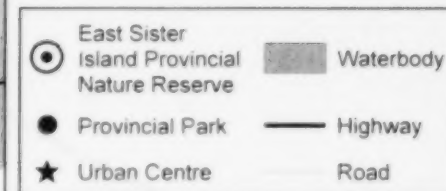
During April 1 to July 31, public access onto East Sister Island by boaters could be detrimental to nesting birds. Unauthorized camping has also occurred on the island in previous years.

Large numbers of double-crested cormorants use East Sister Island as a nesting and staging area. The result is a detrimental impact upon the island's significant vegetation and habitats.

Figure 1



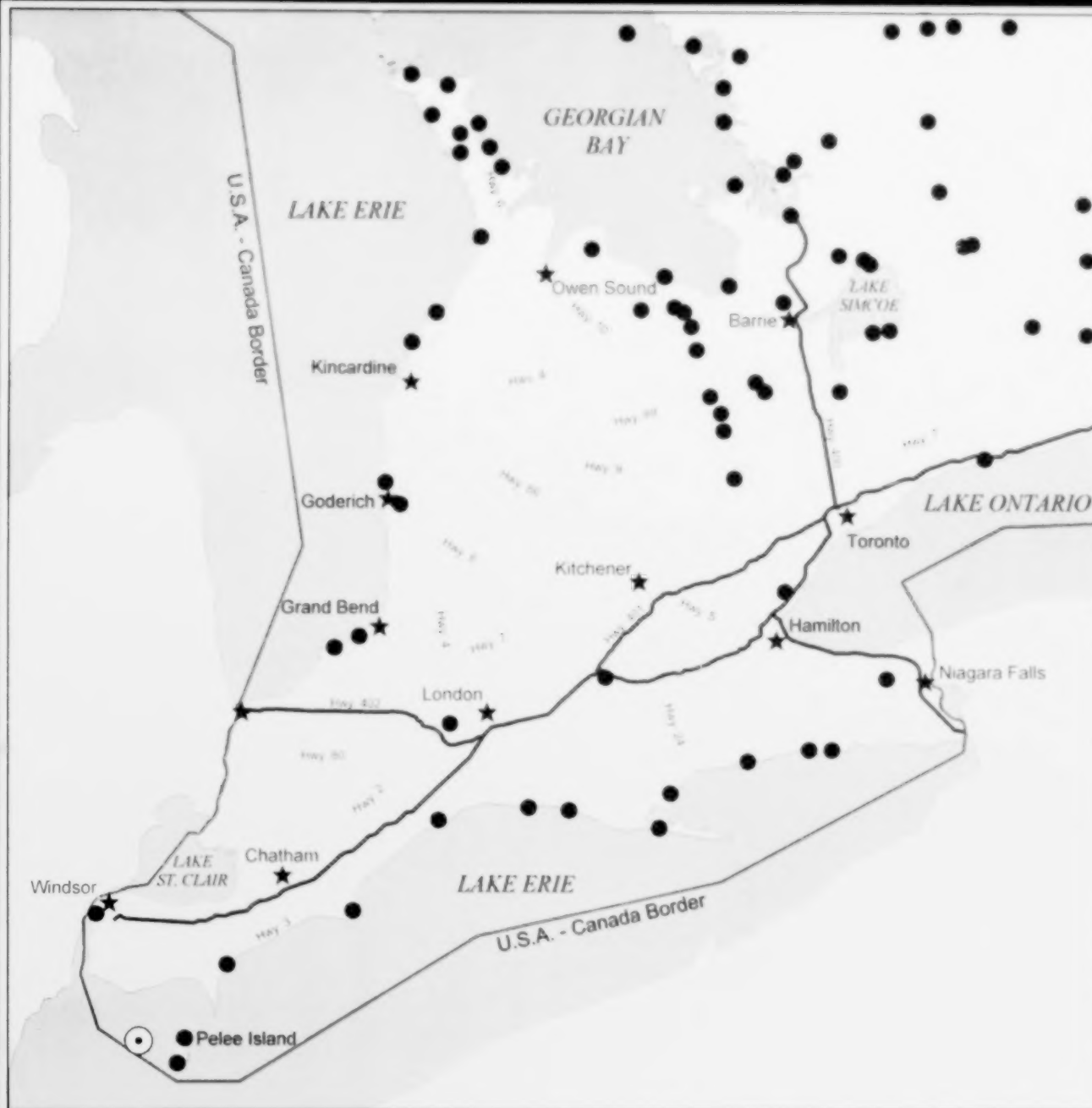
# East Sister Island



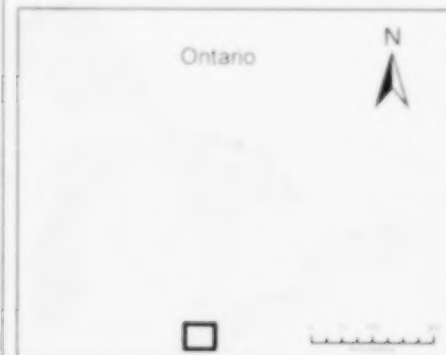
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Figure 1



## East Sister Island



- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>East Sister Island Provincial Nature Reserve</li> <li>Provincial Park</li> <li>Urban Centre</li> </ul> | <ul style="list-style-type: none"> <li>Waterbody</li> <li>Highway</li> <li>Road</li> </ul> |
|---|--|



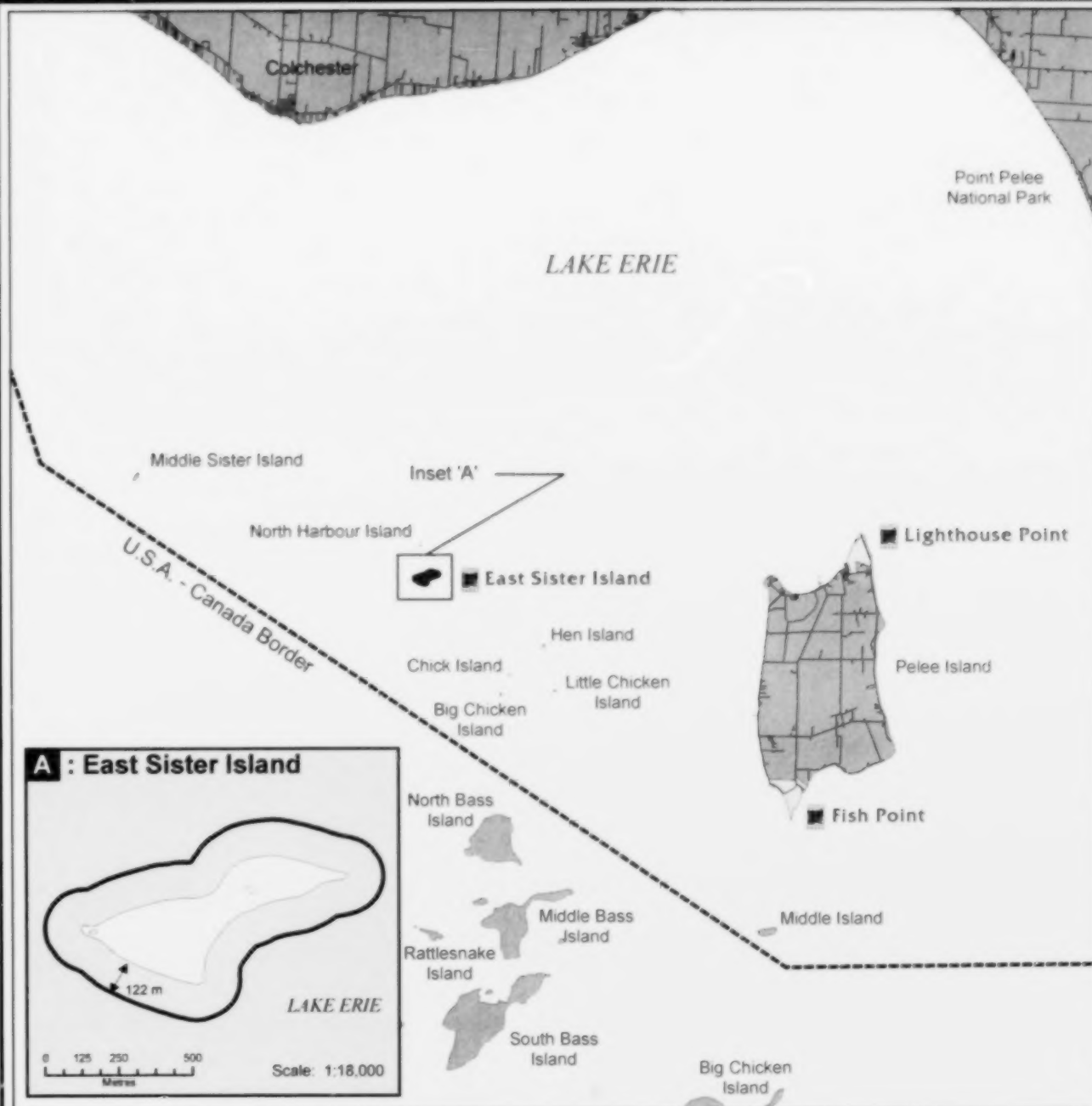
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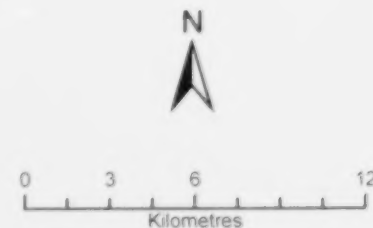
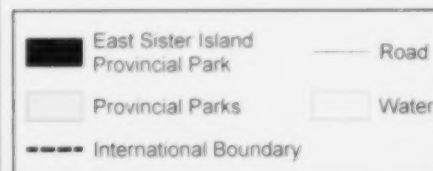


Figure 2

Local Setting & Park Boundary



East Sister Island



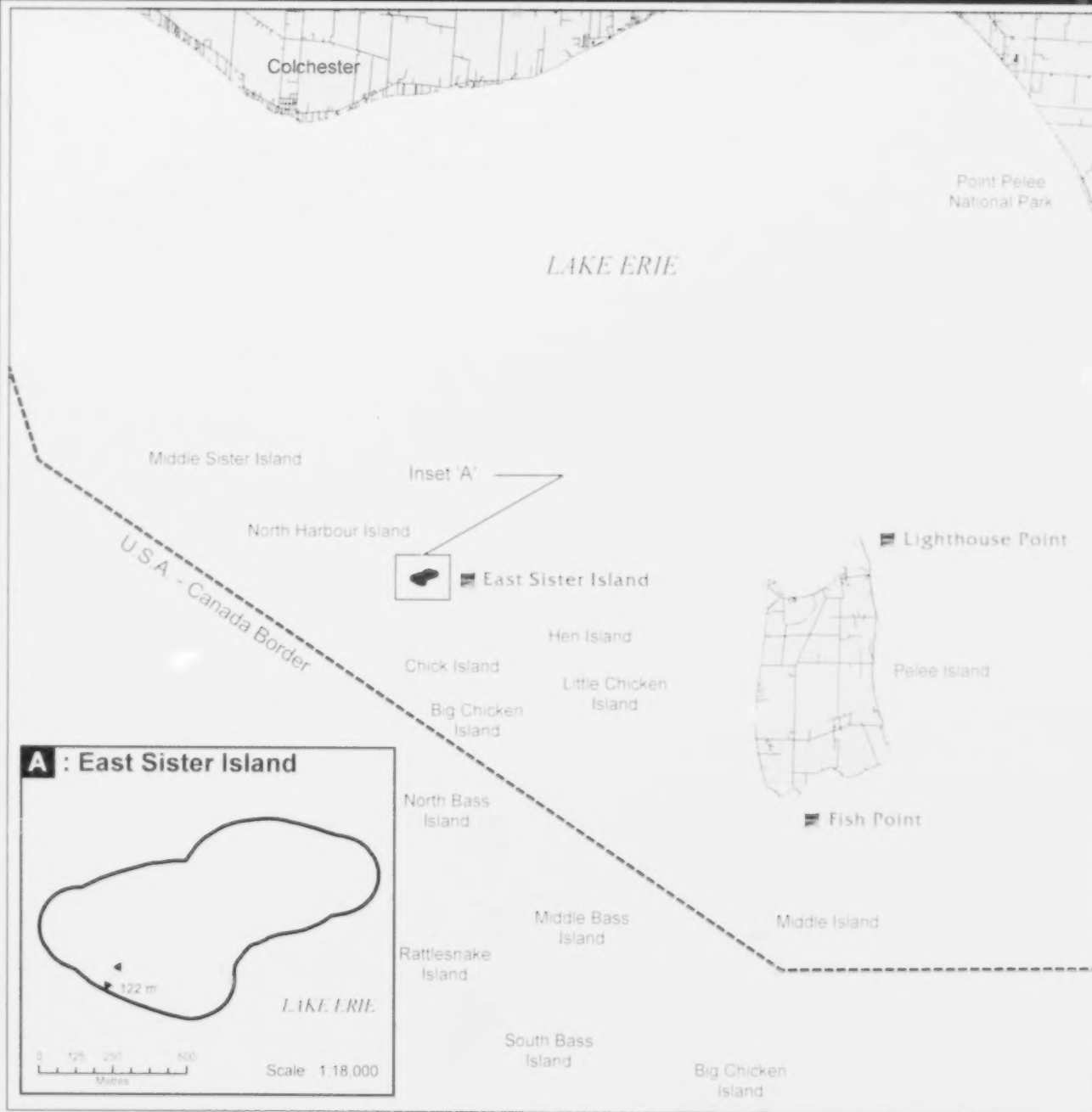
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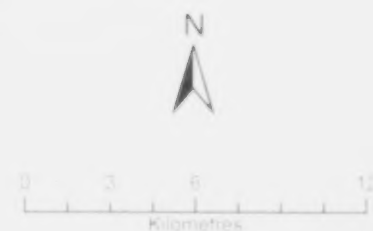
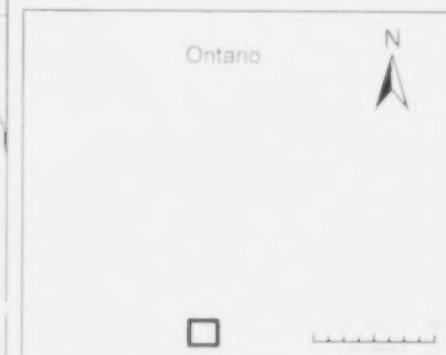


**Figure 2**

**Local Setting & Park Boundary**



**East Sister Island**



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### 3.0 CLASSIFICATION

Ontario's provincial parks are organized into broad categories by park class. Each class has particular purposes and characteristics as well as distinctive planning, management and visitor services policies. Park classification defines an individual park's role in providing opportunities for environmental protection, recreation, heritage appreciation and/or tourism. Each park shares with others in its class particular characteristics, which help determine its specific function. Classification establishes a management framework for individual parks within the provincial system. Provincial parks are divided into six classes: *wilderness, nature reserve, historical, natural environment, waterway and recreation*.

East Sister Island Provincial Park is classed as a nature reserve in recognition of its provincially significant life science features. Nature reserves are areas selected to represent the distinctive natural habitats and landforms of the province. They are protected for educational purposes, as gene pools for research to benefit present and future generations and for their intrinsic values to society. Nature reserves maintain ecological diversity and ensure the perpetuation of species, their communities and earth science features. As well as assuring their long-term viability, study of these areas can improve existing environmental management and understanding of the functioning of natural processes and their response to human impact.

### 4.0 GOAL

***The goal for East Sister Island is to protect significant and representative natural features.***

East Sister Island will be managed for the people of Ontario as a nature reserve class provincial park, protected from negative impacts stemming from either human activity or natural causes, now and in the future. In keeping with the recently approved *Provincial Parks and Conservation Reserves Act* (Bill 11)<sup>1</sup>, the following principles shall guide all aspects of planning and management:

1. Maintenance of ecological integrity shall be the first priority and the restoration of ecological integrity shall be considered.
2. Opportunities for consultation shall be provided.

Basic policy direction for the park is drawn from *Ontario Provincial Parks Policy* and *Ontario Provincial Parks: Planning and Management Policies*.

### 5.0 OBJECTIVES

There are four established objectives for the Ontario Provincial Parks system: *protection, recreation, heritage appreciation and tourism*. As a provincial nature reserve, East Sister Island contributes primarily to the protection and heritage appreciation objectives, which are described below.

#### 5.1 Protection Objective

***The nature reserve's protection objective is to protect provincially significant, special and representative life science features.***

Ontario's parks play an important role in representing and conserving the diversity of Ontario's natural features and ecosystems, across the broader landscape. Protected areas include some of the best representative examples of cultural heritage, life and earth science features within ecologically defined regions. Ontario's 71 ecodistricts are defined based on broad similarities in land formations and predominant vegetation.

Park management plans apply only to the area within the regulated boundary of the park. Within the park boundary, the protection objective will be achieved through appropriate zoning, control of land use and activities, education, and monitoring of ecological impacts. Appropriate mitigation of potential impacts will ensure continued protection of significant features.

The protection objective for the nature reserve may be achieved through active resource management.

Consistent with *Protecting What Sustains Us: Ontario's Biodiversity Strategy*, the nature reserve will be managed to protect species at risk and their habitats.

<sup>1</sup> At the time of writing, Bill 11 was given Royal Assent (June 20, S.O. 2006, Chapter 12).

### 5.1.1 Life Science

East Sister Island offers excellent representation of some of the distinctive natural habitats and landforms of the Carolinian Life Zone (this "life" zone represents the northern extreme of the Southern Deciduous Forest Region, which reaches south as far as the Carolinas, hence its name) and the Lake Erie Archipelago. The island is located within Ecodistrict<sup>2</sup> 7E-1, described as a smooth plain of moderate lime clay broken by ridges of sand and gravel.

A swamp dominates the central part of the island. Mature mesic (moderate moisture levels) deciduous forest occurs east and west of the swamp. The terrain is more elevated to the east, resulting in a drier forest association.

East Sister Island is significant for its southern flora. Its forested area includes stands of black maple, red ash, Kentucky coffee-tree and hackberry.

A total of 22 provincially rare and seven regionally rare plant species has been documented on East Sister Island. Kentucky coffee-tree, a species at risk, is considered threatened in Canada, and is more numerous here than elsewhere in the Erie Islands. Because of the small and isolated location of East Sister Island, the fauna complement is limited. One mammal, eight breeding birds, 10 species of butterfly, one amphibian, and two notable reptiles have been recorded, namely, the threatened Eastern foxsnake and the endangered Lake Erie water snake.

In the west central part of the island, a Kentucky coffee-tree stand provides sanctuary for a large heronry. This heronry represents a major breeding colony for great blue herons which have nested here for decades. The island also supports black-crowned night-herons, great egrets, and double-crested cormorants. The coastal area provides habitat for a variety of waterfowl and shorebirds. Herring gulls nest on the rocky shoreline.

East Sister Island is part of the Pelee Island Archipelago Important Bird Area (IBA), which also includes five other limestone islands, in the Canadian portion of the western basin of Lake

Erie, namely, Middle Sister, North Harbour, Big Chicken, Hen and Middle. The Pelee Island Natural Area is a separate IBA. The Pelee Island Archipelago supports one of the richest assemblages of nesting colonial birds in Lake Erie. At least five bird species, including the great blue heron, black-crowned night-heron, great egret, double-crested cormorant, and herring gull are present in numbers of national significance. Given the location of East Sister and the other islands in the archipelago, they are also thought to be significant as migratory bird stop-overs.

### 5.1.2 Earth Science

East Sister Island and adjacent islands represent the emergence from Lake Erie of two undulations on the surface of Silurian and Devonian bedrock. The island is nearly flat and only a few metres above lake level at its highest point. Glacial grooves are present on the exposed bedrock. Wave action is responsible for solution erosion of the exposed bedrock at the northwest end of the island. Elsewhere the shoreline consists of cobblestones resulting from storms and winter ice action. In 1956, Hurricane Hazel created a raised shingle berm (raised bank of beach gravel) around much of the island (Tracey *et al.* 1971), which remains evident to date.

Shallow soils cover parts of the island. A light brown, stony loam forms shallow deposits where limestone bedrock appears close to the surface. Brown clay deposits have been exposed by wave undercutting along the southeast shore.

The subsurface rock formations beneath East Sister Island have potential for the occurrence of commercial accumulations of oil and natural gas. Since the early 1900's, natural gas with a current value of over \$3 billion has been produced from approximately 600 wells drilled on or under Lake Erie. MNR oil and gas policy does not currently permit drilling for oil under the bed of Lake Erie using offshore wells and drilling for either oil or gas is not permitted west of a straight line drawn from the tip of Point Pelee to Marble Head, Ohio. The lake bed around East Sister Island is located within this no-drill zone.

### 5.1.3 Cultural Resources

In the early 1900s the island contained a house and several acres of peach orchards and garden crops. Old wire fencing may be evidence of past livestock grazing. Former cultivated areas were

<sup>2</sup> For park system planning purposes, Ontario is divided into 71 ecodistricts (formerly known as ecological site districts) based on landforms and biological productivity.

abandoned and overgrew into thickets by the 1940s.

The steamer "Case" departed Cleveland, Ohio, loaded with coal for Sandwich, Ontario, on April 30, 1917. The steamer began to take on water during a severe storm during the crossing. The captain managed to ground the sinking vessel on rocks in the lee of East Sister Island, where it caught fire and burned. The wood and metal remains of the steamer lie scattered on the lake bottom.

## 5.2 Heritage Appreciation Objective

***The nature reserve's heritage appreciation objective is to provide opportunities for unstructured off-site appreciation of this example of Ontario's natural heritage.***

Due to the difficulty in accessing the site and the sensitivity of the natural heritage features on East Sister Island, visitation for purposes other than approved scientific research will not be encouraged. Opportunities for unstructured off-site appreciation of the nature reserve's significant natural heritage features will be provided as described in Section 9.1.

## 6.0 BOUNDARY

The boundary for the nature reserve is outlined in Figure 2. No additions or deletions are contemplated at this time. Two boundary-related facts are worthy of mention. First, only 15 hectares of the 53 hectares regulated as the East Sister Island Provincial Nature Reserve is terrestrial base. The balance (38 hectares) is aquatic. A water boundary extends 122 metres offshore from the island's high water mark.

## 7.0 ZONING

Lands contained within the nature reserve are zoned in accordance with their environmental qualities and required protection. In this sense, East Sister Island will be managed entirely as a nature reserve zone. This 53 hectare zone includes the significant life and earth science features of the nature reserve as well as the water boundary.

## 8.0 RESOURCE MANAGEMENT POLICIES

East Sister Island Provincial Nature Reserve will be managed in accordance with the policies set out in the *Ontario Provincial Parks: Planning and Management Policies* for nature reserves.

Species at risk will be protected consistent with the *Endangered Species Act* and regulations and in accordance with applicable policies. Populations of species at risk and their habitats will be protected and opportunities for their recovery will be provided as directed in corresponding species and ecosystem recovery plans.

Resource management initiatives may be accomplished through partnerships and sponsorships.

An adaptive management approach will be applied to resource management activities within the nature reserve. Adaptive management allows for frequent modification of management strategies in response to monitoring and analyzing the results of past actions and experiences.

There is occasional, uncontrolled access to the nature reserve by boaters. Human presence may be particularly disturbing to nesting colonial water birds, especially heron species. To control this problem, notices may be posted indicating that public access onto East Sister Island is prohibited at certain times of the year (e.g., from April 1 to July 31).

Temporary facilities in support of approved resource management or approved research activities may be permitted in the nature reserve.

In the interest of public safety, the park superintendent may prohibit public access to the nature reserve during approved research or resource management activities.

Sport hunting and commercial trapping will not be permitted. However, control of particular wildlife species may be required for public safety, protection of property, and/or the perpetuation of natural values.

Double-crested cormorant numbers have significantly increased throughout the Great Lakes. Nesting pairs on the islands in the

western basin of Lake Erie have increased from approximately six pairs in 1979 to well over 4500 pairs in 2005 (Weseloh *et al.* 1995, Weseloh, 2005). On East Sister Island, the birds prefer large trees, especially Kentucky coffee-trees, an already threatened species in Ontario. Past and ongoing monitoring will examine the extent of impacts of cormorants on the island's ecosystem and assist in determining whether specific management activities may be deemed necessary.

A resource management plan may be prepared for the nature reserve.

General resource management targets include:

- protective management of special concern, threatened and endangered species, particularly the Kentucky coffee-tree;
- control of alien or invasive species;
- protection of native plant communities from adverse impacts;
- control of access by boaters;
- studies to assess the effects of cormorants on selected vegetation communities; and
- restoration and maintenance of biodiversity.

## 9.0 OPERATIONS POLICIES

East Sister Island will be managed as a satellite of Wheatley Provincial Park. The operating plan for Wheatley Provincial Park will provide park staff and partners with the necessary direction to effectively manage East Sister Island. In addition to addressing the operations policies that follow, the plan will include such topics as budget, staffing, maintenance schedules, enforcement, and emergency services. Wherever possible, the provisions of the plan will be consistent with the approved *Ontario Provincial Parks Minimum Operating Standards* and will be reviewed annually and updated as required.

### 9.1 Natural Heritage Education

Natural heritage education programs will not be provided.

#### 9.1.1 Information

The following objectives for the information component of the natural heritage education program may be achieved through printed media (e.g., fact sheet, on-site notices):

- inform the public about the nature reserve, its features, facilities, protection and management;
- instill in the public a sense of respect for the park environment;
- describe the role of Ontario Parks and the Ministry of Natural Resources; and
- provide a means for the public and stakeholders to communicate with Ontario Parks regarding park management.

#### 9.1.2 Interpretation

Interpretation programming will not be offered.

#### 9.1.3 Recreation

Recreation programming will not be offered.

## 9.2 Research and Monitoring

Scientific research and monitoring by qualified individuals contributing to the knowledge of natural and cultural history and to environmental management will be encouraged. All research and monitoring will be conducted by, or authorized by, Ontario Parks. Research projects will be administered on the basis of park policy directive P2.45 (Research Activities in Provincial Parks) and must meet all requirements under applicable provincial and federal legislation. Approved research and monitoring activities must be consistent with *Ontario Parks' Research and Information Strategy*. Temporary facilities in support of approved research and monitoring activities may be permitted in the nature reserve.

The nature reserve's population of threatened Eastern fox snake and the endangered Lake Erie water snake have been periodically monitored.

Research and monitoring priorities include, but are not limited to:

- monitoring double-crested cormorant populations and their impacts;
- monitor impacts of management activities;
- monitoring populations of other colonial nesting bird species;
- monitoring populations of species at risk; and
- studying the impacts of cormorants on the nature reserve's vegetation.



### 9.3 Recreation

Due to the difficulty in accessing the site and the sensitivity of the features at East Sister Island, visitation for purposes other than scientific research will not be encouraged. Facilities for recreational boat docking and hiking will not be provided.

Prohibited activities in the nature reserve include camping and sport hunting.

Sport fishing is permitted within the regulated Lake Erie portion of the East Sister Island water boundary.

## 10.0 DEVELOPMENT POLICIES

A low-impact, ecologically sustainable management concept will be applied for East Sister Island. No development will occur aside from temporary facilities in support of research or resource management activities approved by Ontario Parks. Resource management and research activities and facilities will be compatible with protection of the nature reserve, and will be subject to the nature reserve's development and management policies. Sites altered by approved research or resource stewardship activities will be rehabilitated as closely as possible to their previous natural condition by the proponent(s).

## 11.0 IMPLEMENTATION POLICIES

Opportunities for partnerships involving volunteers, non-government organizations or others may be explored, such as the Pelee Island Heritage Centre or Point Pelee National Park.

Implementation of the park management plan shall occur in an ecologically sustainable manner. All requirements of the *Environmental Assessment Act*, *Environmental Bill of Rights*, *Provincial Parks and Conservation Reserves Act* (Bill 11), *Endangered Species Act* and other pertinent legislation will be met. Implementation and/or site plans will precede resource management initiatives, with an appropriate level of public consultation. Preparation of implementation plans will be contingent upon the availability of funding and unforeseeable changes in priorities or park policy.

All aspects of park management, development and operation will be screened and undertaken in accordance with the requirements of *A Class Environmental Assessment for Provincial Parks and Conservation Reserves*.

## 12.0 PLAN AMENDMENT AND REVIEW

The park management plan can be reviewed or amended to address changing issues or conditions. A review may involve a reassessment of all or part of the plan, including classification, zoning, goal, objectives and all resource management, operations and development policies. An amendment can be considered to address specific issues or needs. Any person may initiate an amendment process by submitting a proposed amendment, with an explanation of its purpose, to Ontario Parks, which will determine whether, and under what conditions, the amendment process should proceed.

Ontario Parks will retain on file reference copies of relevant background information, terms of reference, preliminary park management plan, approved park management plan, and any subsequent plan reviews or amendments.

## 13.0 SUMMARY OF PUBLIC CONSULTATION

Public consultation is a very important part of the park management planning process. The four phases of the process consist of:

- Phase 1 - Terms of Reference
- Phase 2 - Background Information
- Phase 3 - Preliminary Park Management Plan
- Phase 4 - Approved Park Management Plan

Phase 1 consisted of a 45-day opportunity for the public to inspect the approved terms of reference for the park management planning process. A planning notice was inserted in local newspapers and mailed out to mandatory contacts such as local First Nations, adjacent property owners and other interested parties (78 mailings). In addition, the approved Terms of Reference were posted on the Ontario Parks' website and a policy proposal notice was posted on the *Environmental Bill of Rights* (EBR) Environmental Registry on March 30, 2004.

Phase 2 of the planning process provided a 45-day opportunity for the public to review relevant background information at the Wheatley Provincial Park office. A planning notice was inserted in local newspapers and mailed out to mandatory contacts such as local First Nations, adjacent property owners and other interested parties (80 mailings). In addition, an updated policy proposal notice was posted on the EBR Environmental Registry on June 30, 2004.

Phase 3 included the release of the approved *East Sister Island Preliminary Park Management Plan*. The document was posted on the Ontario Parks' website. Notices were sent out to mandatory contacts such as local First Nations, adjacent property owners and other interested parties (86 mailings). A paid advertisement was placed in local newspapers and an open house is scheduled in Leamington on September 23, 2006. An updated policy proposal notice was posted on the EBR Environmental Registry on August 30, 2006. The public will have a 45-day opportunity to review the approved preliminary park management plan. All public comments forwarded to Ontario Parks will be fully considered in the preparation of the final park management plan.

Phase 4 will involve the release of the approved *East Sister Island Park Management Plan*. The document will be posted on the Ontario Parks' website. A notice will be distributed to local First Nations, adjacent property owners and other interested parties. A paid advertisement will be placed in local newspapers and a policy decision notice will also be posted on the EBR Environmental Registry. The public will have a final opportunity to inspect the approved Management Plan for a period of 45 days after its formal release. This will allow interested participants in the planning process a final opportunity to determine if their concerns were considered and addressed.

## 14.0 REFERENCES

Bird Studies Canada. *Pelee Island Archipelago Important Bird Area Site Listing*. 2005.  
<http://www.bsc-eoc.org/iba/site.jsp?siteID=ON014>.

Campbell, C. A. 1976. *Preliminary ecological report on Lighthouse Point, Fish Point and East Sister Island Nature Reserves, Essex County, Ontario*. Prepared for Ontario Ministry of Natural Resources, Chatham, Ontario.

Celestino, Mary. 2002. *Wildflowers of the Canadian Erie Islands*. Essex County Field Naturalists' Club, Windsor.

Chapman, L.J. and D.F. Putnam. 1984. *The Physiography of Southern Ontario*. Third Edition, Ontario Geological Survey, Special Volume 2, Toronto.

Crins, W. J. and M. J. Oldham. 2000. *Survey of Possible Double-crested Cormorant (Phalacrocorax auritus) Impacts on Rare Plant Occurrences on East Sister and Middle Islands, Lake Erie, Ontario, 15 June 2000*. Unpublished draft report. Ontario Ministry of Natural Resources.

Hebert, C. E., J. Duffe, D. V. Weseloh, E. M. Senese and G. D. Haffner. 2005. *Unique Island Habitats May be Threatened by Double-crested Cormorants*. *Journal of Wildlife Management*. 69(1):68-76.

Kamstra, J., M.J. Oldham and P.A. Woodliffe. 1995. *A Life Science Inventory and Evaluation of Six Natural Areas in the Erie Islands, Essex County, Ontario: Fish Point Provincial Nature Reserve; Lighthouse Point Provincial Nature Reserve, Stone Road Alvar Complex, Middle Point, East Sister Island Provincial Nature Reserve and Middle Island*. Aylmer District (Chatham Area), Ontario Ministry of Natural Resources.

Mitchell, S. 1973. *A Report on the Resources and Management of East Sister Island, Lake Erie, Ontario*. Ministry of Natural Resources.

Ontario Ministry of Natural Resources. 1983. *Chatham District Land Use Guidelines*. Chatham District, Chatham.

Ontario Ministry of Natural Resources. 2005. *A Class Environmental Assessment for Provincial Parks and Conservation Reserves*. Peterborough.

Ontario Ministry of Natural Resources. 1978. *Collected Plant Specimens from East Sister Island, Ontario as represented in the Herbarium of Rondeau Provincial Park*. Parks Division, Chatham District.

Ontario Ministry of Natural Resources. 1995. *Environmental Bill of Rights Procedures Manual (Working Draft)*. Corporate Policy and Planning Secretariat.



Ontario Ministry of Natural Resources. 1994. *Ontario Provincial Parks Management Planning Manual*. Provincial Operations Branch, Peterborough.

Ontario Ministry of Natural Resources. 1978. *Ontario Provincial Parks: Planning and Management Policies*. Parks and Recreational Areas Branch, Toronto.

Ontario Ministry of Natural Resources. 1992. *Ontario Provincial Parks: Planning and Management Policies, 1992 Update*. Provincial Parks and Natural Heritage Policy Branch, Toronto.

Ontario Ministry of Natural Resources. 2005. *Our Sustainable Future – Ministry of Natural Resources Strategic Directions*. Peterborough.

Ontario Ministry of Natural Resources. 2005. *Protecting What Sustains Us: Ontario's Biodiversity Strategy*.

Ontario Ministry of Natural Resources. 1990. *Provincial Parks Act*, Revised Statutes of Ontario.

Ontario Ministry of Natural Resources. 1998. *Review of the Population Status and Management of Double-Crested Cormorants in Ontario*. Fish and Wildlife Branch, Peterborough.

Ontario Ministry of Natural Resources. 2005. *Species at Risk in Ontario List*. Available at: [http://www.mnr.gov.on.ca/mnr/speciesatrisk/status\\_list.html](http://www.mnr.gov.on.ca/mnr/speciesatrisk/status_list.html)

Tracey, A.G. *Brief Geomorphology and Geology of East Sister Island*. Parks Planning Branch, Division of Parks, Ontario Ministry of Natural Resources, Toronto. Earth Science Series, Open File Report 7111, 16p.

Tracey, A.G., I.D. Macdonald and T.J. Beechey. East Sister Island, Essex County, Ontario. 1971. *A natural science inventory report*. Unpublished report. Parks Branch, Ontario Department of Lands and Forests.

Wachter, Georgann, and Michael Wachter. 2001. *Erie Wrecks West – A Guide to the Shipwrecks of Western Lake Erie*.

Weseloh, D.V., P.J. Ewins, J. Struger, P. Mineau, C. A. Bishop, S. Postupalsky, and J.P. Ludwig. 1995. Double-crested cormorant of the Great Lakes: changes in population size, breeding

distribution and reproductive output between 1913 and 1991. *Colonial Waterbirds* 18 (Spec. Publ. 1): 48-59.

Weseloh, D.V. 2005. Unpublished data.





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